

What is claimed is:

1     1.     An apparatus, comprising:  
2             a first electronic device adapted to  
3                     compare a first indicator of a predicted duration of a first transmission to  
4     a second electronic device with a second indicator of a predicted duration of a second  
5     transmission to a third electronic device;  
6             adjust starting times of at least one of the first and second transmissions  
7     to cause the first and second transmissions to end at approximately a same time; and  
8             transmit the first and second transmissions using the adjusted starting  
9     times.

1     2.     The apparatus of claim 1, wherein the first electronic device is further adapted  
2     to receive a first response comprising a first acknowledgment to the first transmission  
3     from the second electronic device and to receive a second response comprising a  
4     second acknowledgment to the second transmission from a third electronic device.

1     3.     The apparatus of claim 1, wherein the first electronic device is further adapted  
2     to include a poll in the first transmission and to include a poll and other data in the  
3     second transmission.

1     4.     The apparatus of claim 1, wherein the first electronic device is further adapted  
2     to set a transmission period for the first and second transmissions based on a longer of  
3     the predicted durations of the first and second transmissions.

1     5.     The apparatus of claim 1, wherein:  
2             the first transmission and the second transmission are to have different data  
3     rates; and  
4             the predicted durations of the first and second transmissions are partly based on  
5     the different data rates.

1     6.     The apparatus of claim 1, wherein the first electronic device comprises a  
2     computing platform to perform said comparing.

1     7.     The apparatus of claim 6, further comprising at least four  
2     modulator/demodulators coupled to the computing platform.

1     8.     The apparatus of claim 7, further comprising at least four antennas, each of the  
2     at least four antennas coupled to at least one of the at least four  
3     modulator/demodulators.

1     9.     The apparatus of claim 1, wherein the first electronic device comprises a base  
2     station.

1     10.    The apparatus of claim 1, wherein the second and third electronic devices  
2     comprise mobile devices.

1     11.    The apparatus of claim 1, wherein the first electronic device is further adapted  
2     to transmit the first and second transmissions using spatial division multiple access  
3     techniques.

4 12. A method, comprising:  
5 making a comparison of a first indicator of a predicted duration of a first  
6 transmission to a first electronic device with a second indicator of a predicted duration  
7 of a second transmission to a second electronic device;  
8 beginning a transmission of a longer of the first and second transmissions; and  
9 beginning a transmission of a shorter of the first and second transmissions after  
10 a delay approximately equal to a difference between the predicted duration of the first  
11 transmission and the predicted duration of the second transmission;  
12 wherein the first and second transmissions use spatial division multiple access  
13 techniques.

1 13. The method of claim 12, further comprising ending the first and second  
2 transmissions at approximately a same time.

1 14. The method of claim 13, further comprising beginning an acknowledgment  
2 timeout period after said ending the first and second transmissions.

1 15. The method of claim 12, further comprising receiving a first response from the  
2 first electronic device and receiving a second response from the second electronic  
3 device substantially simultaneously.

1 16. The method of claim 15, wherein said receiving the first and second responses  
2 comprises receiving a beginning of the first and second responses approximately an  
3 interframe space after an end of the first and second transmissions.

- 1 17. The method of claim 12, further comprising using data rates to determine the
- 2 predicted durations.

1 18. A machine-readable medium that provides instructions, which when executed  
2 by a processing platform, cause said processing platform to perform operations  
3 comprising:  
4 determining predicted durations of multiple transmissions to be transmitted  
5 from an electronic device;  
6 adjusting start times for at least some of the transmissions to cause the multiple  
7 transmissions to end at approximately a same time; and  
8 transmitting the multiple transmissions substantially simultaneously using the  
9 adjusted start times and using spatial division multiple access techniques.

1 19. The medium of claim 18, wherein said determining comprises using data rates  
2 to determine said predicted durations.

1 20. The medium of claim 18, wherein the operations further comprise receiving  
2 responses to the multiple transmissions substantially simultaneously.

1 21. The medium of claim 20, wherein the operations further comprise initiating a  
2 timeout period for reception of an acknowledgment to at least one of the multiple  
3 transmissions.

1 22. The medium of claim 20, wherein said receiving comprises receiving  
2 beginnings of the responses approximately an interframe space after an end of the  
3 multiple transmissions.